



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,085	05/12/2006	James A. Horton	5557-2US	6347
27915 7590 07/01/2008 LIPTON, WEINBERGER & HUSICK P.O. Box 203 Exton, PA 19341				
EXAMINER KIM, KENNETH S				
ART UNIT 2111		PAPER NUMBER		
MAIL DATE 07/01/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/579,085

**Applicant(s)**

HORTON ET AL.

**Examiner**

Kenneth S. KIM

**Art Unit**

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. Claims 1- 20 remain for examination.
2. Applicant is request to confirm that the reference numerals and font size are adequate in figures 14-18.
3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - (a) Claim 1, the configuration of the message ports and processing elements is ambiguous (and the message path).
  - (b) Claim 1, it is not clear how a massage from an origin processing element is communicated to the destination processing element.
  - (c) Claims 2-19, the relevance and interaction of the limitation with those in the base claim is not clear.
  - (d) Claim 20, the same as (a) and (b).
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 2111

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al, U.S. Patent No. 7,080,156, cited in the previous office action.

The rejection is respectfully maintained for a torus is a form of mesh with opposite end units connected to each other.

6. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Mukherjee et al, U.S. Patent No. 6,961,781.

Mukherjee et al teaches the invention as claimed in claim 1 including a message passing fabric modular processor system comprising:

(a) a plurality of processing elements, each element accessing in data communication with a set of available processing elements (col. 4, line 60),

(b) a plurality of message ports in communication with each processing element, each pair of message ports on adjacent processing elements defining a message path there between (fig.3),

(c) addressing means associated with each processing element for indicating the destination processing element of a message in the fabric (to route to the destination; col. 3, line 5),

(d) prioritization means associated with each processing element and with each message port for determining which message port is to be given access to the

Art Unit: 2111

associated processing element or message port for the purpose of communicating therewith (col. 14, line 29),

(e) wherein the fabric asynchronously establishes routes for synchronous messages from an origin processing element to a destination processing element according to the prioritization to permit an operation to occur at the destination processing element (col. 4, line 1), and

further teaches as in claims 2-19,

(f) the fabric is comprised of heterogeneous processing elements (can be any type of processing elements) - claims 2-9, and

(g) optimal path under various conditions (conventional methods and col. 17, line 5) – claims 10-19.

the method claim 20 is equivalently rejected based on the same reason.

7. Applicant's arguments filed May 28, 2008 have been fully considered but they are not persuasive.

Applicant argued that the reference does not teach (a) communicating messages across a mesh unaltered, (b) message not containing source, destination, and region address, (c) control information flowing back over the same path segment, (d) control passed in both direction, (e) attempting each possible optimal segment, (f) notifying original node of delivery failure, (g) detection of deadlock and correction, (h) exhaustively attempting all optimal paths, and (i) communication without message queue.

Art Unit: 2111

The claims, however, do not recite any of the above features and how the features come about.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth S KIM whose telephone number is (571) 272-3627. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth S Kim  
Primary Examiner, Art Unit 2111

July 3, 2008